

**Work Order ID 66357**

Page 1

Friday, February 11, 2011 1:12:34 PM

Item ID: D206-642-541

Accept



Setup Start



Revision ID:

Stop



Item Name: Replacement Skidtube

Start Date: 2/14/2011 Start Qty: 1.00



Cust Item ID:

Required Date: 2/28/2011 Req'd Qty: 1.00



Customer:

Reference:

Approvals:

Process Plan: ME

Date: 11-02-11

Tooling:

Date:

Run Start



QC:

Date:

SPC (Y/N):

Date:

Stop

Sequence ID/  
Work Center IDOperation  
DescriptionSet Up/  
Run Hours

Tool ID

Tool #

Plan  
CodeAccept  
QtyReject  
QtyReject  
NumberInsp.  
Stamp

Draw Nbr

Revision Nbr

D3274

D

IIN-D206-642

Rev M

100

0.00



DOCUMENT CONTROL

DC

Memo

0.00

Document Control

Photocopy bluefile &amp; type labels per PPP D206-642-541

CHG003

N/A

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

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Plan  
CodeAccept  
QtyReject  
QtyReject  
NumberInsp.  
Stamp

110

0.00



Skidtubes

Skidtubes

Memo

0.00

\*\*\*\*VERIFY AND INSPECT THE MATERIAL PRIOR TO USE\*\*\*\*

1- Bend FWD end of tube using bend prog D3274 FWD and foil 10 as per dwg D3274, cut fwd end of tube with saw table setup D3274.

DP 11-3-10

2- remove fwd indexing ridge as per dwg D3274. Prepare for welding

DP 11-3-16

3- weld fwd cap as per dwg D3274 and OSI004

AR Aluminum Rod Batch: M111385/M116577

4- grind fwd cap weld on top surface only

BE 11-3-23

5- Cut AFT end of tube at 170.9" as per dwg D3274 and deburr end.

6-Drill Aft cap pilot hole using DT8025

7 -Cleco DT8025 in position and install pilot hole drill Jig DT8742A,B,C,D.  
Drill 3/16" pilot holes as per Dwg D32748 -Remove inner indexing ridge on aft end of skidtube as per Dwg D3274 scribe  
batch #

9 -Open aft end cap holes to Ø0.208" as per Dwg D3274. Deburr aft end.

BE 11/03/23

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Run Start



QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Stop

Sequence ID/  
Work Center IDOperation  
DescriptionSet Up/  
Run HoursTool ID Tool # Plan Accept Reject Reject Insp.  
Code Qty Qty Number Stamp

130

QC3- Inspect Part Finish

0.00



QC

Memo

0.00

Quality Control

DP 11-4-5

150

Skidtubes

0.00



Skidtubes

Memo

0.00

Skidtubes

1-Open Ø0.313" and 0.375" crossbolt spacer holes as per Dwg D3274

2-Deburr crossbolt spacer holes as per Dwg D3274 and blow out chips from inside the tube

3-Bond web in place as per Dwg D3274 &amp; QSI 015.

A/R ☐ Sikaflex-291 ☒ M116948 ☐Sikaflex expire date: ☐ 12-1-15 ☐Start: ☐ 11-4-5 ☐ Time: ☐ 5PM ☐Finish: ☐ 11-4-6 ☐ Time: ☐ 8AM ☐

(Adhere for 12 hours)

DP 11-4-5

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Run Hours

Tool ID

Tool #

Plan  
CodeAccept  
QtyReject  
QtyReject  
NumberInsp.  
Stamp

160



QC

Quality Control

QC5- Inspect part completeness to step on W/O

0.00

Memo

0.00

170



Skidtubes

Skidtubes

Skidtubes

Memo

1-Bend AFT end of tube using bend prog. D3274 AFT as per dwg D3274. Install drop pins in crossbolt spacer holes to maintain web position.

2- DRILL PILOT HOLES FOR WEARPLATES USING D3274-1T2  
OPEN HOLES TO .297" . Deburr3-DRILL TOE PIN HOLE .640" DIA AS PER DWG USING DT8935 FWD  
END OF TUBEDEBURR INSIDE OF HOLE AS NECESSARY (DO NOT ENLARGE HOLES)  
REMOVE ANY FOREIGN OBJECTS INSIDE OF TUBES

4- Countersink crossbolt spacer holes as per Dwg D3274

5- prepare for welding

0.00

0.00

SAD 11-04-29

BE 11/05/05

W/O:		WORK ORDER CHANGES					
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Page 6



**Customer:**

**THE UNIVERSITY OF CHICAGO**

1. The first step is to identify the problem or question that needs to be addressed. This involves understanding the context and the specific requirements of the task.

2. The second step is to gather relevant information and resources. This may involve researching existing solutions, consulting with experts, or collecting data.

3. The third step is to develop a plan or strategy. This involves breaking down the problem into smaller, manageable tasks and determining the sequence of steps to be taken.

4. The fourth step is to implement the plan. This involves carrying out the tasks identified in the plan, often in a systematic and organized manner.

5. The fifth step is to evaluate the results. This involves comparing the outcomes of the implementation against the original goals and objectives to determine the effectiveness of the solution.

6. The sixth step is to reflect on the process. This involves considering what worked well, what challenges were encountered, and what lessons can be learned for future tasks.

7. The seventh step is to communicate the findings. This involves sharing the results of the process with others, often through a report or presentation, to ensure transparency and accountability.

8. The eighth step is to document the process. This involves recording the steps taken, the resources used, and the outcomes achieved, which can be useful for future reference and learning.

9. The ninth step is to seek feedback. This involves asking others for their input and suggestions, which can help to improve the process and the final outcome.

10. The tenth step is to iterate. This involves repeating the process as needed, making adjustments based on feedback and new information, to continuously improve the solution.

[illegible]

...the ...

**Date:** \_\_\_\_\_ **SPC (Y/N):** \_\_\_\_\_

**Insp.  
Stamp**

**00000000000000000000**

0.00

B. 11.05.15

1. The first step in the process is to identify the problem or issue that needs to be addressed. This involves gathering information and understanding the context of the problem.

0.00

A/R ☐ Aluminum Rod ☐

Dwg  
Use  
11/05/05  
B

11/03/03  
B 11/05/06  
DE 11/05/07

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Customer:

Reference:

Run Start



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Sequence ID/  
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DescriptionSet Up/  
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Tool ID

Tool #

Plan  
CodeAccept  
QtyReject  
QtyReject  
NumberInsp.  
Stamp

200

QC5- Inspect part completeness to step on W/O

0.00



QC

Memo

0.00

Quality Control

*Suloslog*

210

QC10- Inspect visual per QSI004- ground welds

0.00



QC

Memo

0.00

Quality Control

*Suloslog*

220

Pressure Wash per QSI005 4.3

0.00



HandFinish

Memo

0.00

Hand Finishing

Re-alodine tube as per QSI 005 section 4.1.2.1 do not acid etch

*(IX) m-l 11/05/09*

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Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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230

White Gloss(Ref:4.3.5.1) per QSI005 4.3-Alum

0.00



Powdercoat

Powder Coating

Memo

START TIME:

OVEN TEMPERATURE:

FINISH TIME:

0.00

1X ~~Ø~~ M-6 11/05/09

240

QC3- Inspect Part Finish

0.00



QC

Quality Control

Memo

0.00

1 BR 11-5-11.

250

HandFinishing

0.00



HandFinish

Hand Finishing

Memo

0.00

1-Install Nut Plate as per Dwg D3274. Apply LPS-3 to Nut Plate and rivets.

A/R ☐ N/A ☐ LPS-3

2-Install inserts as per Dwg D3274. Use a drop of Sikaflex inside insert holes a

A/R ☐ Sikaflex-291

Sikaflex expire date:

11/596  
11/6945  
1201

1 BR 11-5-11.

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NumberInsp.  
Stamp

260



QC

Quality Control

QC5- Inspect part completeness to step on W/O

0.00

0.00

Sulisty

70

Memo

Inspect Nut Plate &amp; Inserts

270



HandFinish

Hand Finishing

HAND FINISHING RESOURCE #1

0.00

0.00

Memo

1-Install wearpads &amp; gaskets as per Dwg D3274.

2-Install ring as per Dwg D3274

A/R ☐ Sikaflex-291 ☒ M116945Sikaflex expire date: ☐ 12-01

3-Inspect for foreign objects as per QSI 024

4-Spray inside of tube on both sides of web with LPS-3

A/R LPS-3 Batch: \_\_\_\_\_

5-Install Aft Cap and seal with Sikaflex. Clean excess adhesive.

A/R ☐ Sikaflex-291 ☒ M116945Sikaflex expire date: ☐ 12-01

PROCYON BATCH-M114596

1

BR 11-5-11

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			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

**Work Order ID 66357**

Friday, February 11, 2011 1:12:34 PM



Page 10

Item ID: D206-642-541

Accept



Setup Start



Revision ID:

Stop



Item Name: Replacement Skidtube

Start Date: 2/14/2011 Start Qty: 1.00



Cust Item ID:

Required Date: 2/28/2011 Req'd Qty: 1.00



Customer:

Reference:

Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_

QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Run Start



Stop



Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
280  QC Quality Control	QC5- Inspect part completeness to step on W/O  Memo	0.00 0.00		8 11/6/5-1/11		(XU)			
290  Packaging Packaging	Identify as per dwg & Stock Location: _____  Memo PDP 66366	0.00 0.00							11/6/9/80
300  QC Quality Control	QC21- Final Inspection - Work Order Release  Memo	0.00 0.00							11/6/9 JJ MF 11-06-08

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

# Picklist Print

Page 1

Friday, February 11, 2011 1:12:30 PM

Work Order ID: 66357

Parent Item: D206-642-541

Parent Item Name: Replacement Skidtube


Start Date: 2/14/2011

Required Date: 2/28/2011

Start Qty: 1.00

Required Qty: 1.00

Comments: IPP Rev:B 05.09.23 Revised per D206-642 Rev. J KJ/JLM  
 IPP Rev:C 07-02-23 Added SS Wearplates & Gaskets JLM  
 IPP Rev:D 07-12-06 replace NAS1515H3L to D3672-1 DD  
 IPP Rev:E 08-04-17 as per PAR 08-015 DD verified by:EC  
 IPP Rev:F 08-06-02 add comment DD verified by:EC  
 IPP Rev:G 08-10-09 revise details DD verified by:EC

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
D2600-1-190  Extrusion Round 3" 206		Manufactured	No			110	Each	43.0000	1	1			

Location Loc Qty Loc Code

LG

43

47575

2

59874

41

Manufactured No

110

Each

114.0000

1

1

D3285-1



Cap

Location Loc Qty Loc Code

LG

114

52511

66

52647

48

Manufactured No

150

Each

4.0000

1

1

D3282-041



Float Web (206L/407)

Location Loc Qty Loc Code

LG

4

65292

1

65293

3

DP 11-3-1  
 BEH/03/23

DP 11-4-5

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

# Picklist Print

Friday, February 11, 2011 1:12:30 PM

Work Order ID: 66357



Parent Item: D206-642-541



Parent Item Name: Replacement Skidtube

Start Date: 2/14/2011

Required Date: 2/28/2011

Start Qty: 1.00

Required Qty: 1.00

D2649 Manufactured No 190 Each 243.0000 12 12



Cross Bolt Spacer



BE 11/05/05  
2 66507 (x12)

Location Loc Qty Loc Code

LG	243	
58545	2	
60652	4	
61496	2	
62889	11	
63359	3	
65317	221	

D3275-1 Manufactured No 190 Each 53.0000 12 12



Crossbolt Spacer



BE 11/05/05  
2 66109 (x12)

Location Loc Qty Loc Code

LG	53	
53453	8	
62399	1	
63546	19	
65295	25	

CR3212-4-03 Purchased No 250 Each 1,863.000 2 2



Cherry Rivet



2 BR 11-5-11

Location Loc Qty Loc Code

ST311	1863	
110153	35	
111359	5	
112314	2	
114436	448	
114450	31	
114859	1342	

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries



# Picklist Print

Page 3

Friday, February 11, 2011 1:12:31 PM

Work Order ID: 66357

Parent Item: D206-642-541

Parent Item Name: Replacement Skidtube

Start Date: 2/14/2011

Required Date: 2/28/2011

Start Qty: 1.00

Required Qty: 1.00

D3415-041

Manufactured

No

250

Each

25.0000

1

1



Nut Plate

LocationLoc QtyLoc Code

ST056

25

33842 ✓

25

CCR264SS3-3

Purchased

No

250

Each

154.0000

2

2



Cherry Rivet

LocationLoc QtyLoc Code

ST311

154

112314

4

113539

44

113973 ✓

106

ALS4-1032-130

Purchased

No

250

Each

1,355.000

78

78



Insert

LocationLoc QtyLoc Code

PKG11

1220

114723

220

116864

1000

ST282

96

110511

10

115911

86

ST381

39

114654

39

117331

78. BL 11-5-11

Friday, February 11, 2011 1:12:31 PM

Shop Packet Print

Page 3

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

# Picklist Print

Page 4

Friday, February 11, 2011 1:12:31 PM

Work Order ID: 66357

Parent Item: D206-642-541

Parent Item Name: Replacement Skidtube

Start Date: 2/14/2011

Required Date: 2/28/2011

Start Qty: 1.00

Required Qty: 1.00

D3536-15 Manufactured No

270

Each

10.0000

1

1



Gasket

Location

Loc Qty

Loc Code

FP

66559

1

56055

1

FP011

8

63568

8

FP11

1

59238

1

1 BL 11-5-11

D3536-23 Manufactured No

270

Each

11.0000

1

1



Gasket

Location

Loc Qty

Loc Code

FP011

66560

1

63570

1

ST

10

66240

10

1 BL 11-5-11

D3536-35 Manufactured No

270

Each

16.0000

1

1



Gasket

Location

Loc Qty

Loc Code

FP012

16

58683

1

63579

1

65573

2

66237 ✓

12

1 BL 11-5-11

Friday, February 11, 2011 1:12:31 PM

Shop Packet Print

Page 4

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

# Picklist Print

Friday, February 11, 2011 1:12:31 PM

Work Order ID: 66357

Parent Item: D206-642-541

Parent Item Name: Replacement Skidtube

Start Date: 2/14/2011

Required Date: 2/28/2011

Start Qty: 1.00

Required Qty: 1.00

D3536-39

Manufactured No

270

Each

19.0000

1

1



Gasket

Location

Loc Qty

Loc Code

FP012

18

~~66241~~ ✓  
66241 ✓

6

12

FP12

1

58215

1

1 BR 11-5-11

D3535-15

Manufactured No

270

Each

3.0000

1

1



Wearshoe

Location

Loc Qty

Loc Code

FP18

3

66558  
63569

3

1 BR 11-5-11

D3535-35

Manufactured No

270

Each

12.0000

1

1



Wearshoe

Location

Loc Qty

Loc Code

FP018

12

65926 ✓

12

1 BR 11-5-11

D3535-39

Manufactured No

270

Each

13.0000

1

1



Wearshoe

Location

Loc Qty

Loc Code

FP-18

13

64076 ✓

13

1 BR 11-5-11

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

# Picklist Print

Friday, February 11, 2011 1:12:31 PM

Work Order ID: 66357

Parent Item: D206-642-541









Parent Item Name: Replacement Skidtube

Start Date: 2/14/2011

Required Date: 2/28/2011

Start Qty: 1.00

Required Qty: 1.00

D3535-23	Manufactured	No	270	Each	5.0000	1	1
							
Wearshoe							
			<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>		
			FP021 66236	5			1 BR 11-5-11
			63571	4			
D3537-3	Manufactured	No	270	Each	30.0000	1	1
							
Wearpad							
			<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>		
			FP17 66230	30			1 BR 11-5-11
			65929	30			
D3537-1	Manufactured	No	270	Each	39.0000	9	9
							
Wearpad							
			<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>		
			FP017 66135	39			2 > BR 11-5-11
			66804	39			
			65057				
AN960C10L	NAS1149C0332R	Purchased	No	270	Each	25.0000	80
							
washer							
			<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>		
			ST245 117291	25			80 BR 11-5-11
			107534	25			

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries



# Picklist Print

Friday, February 11, 2011 1:12:31 PM

Work Order ID: 66357

Parent Item: D206-642-541

Parent Item Name: Replacement Skidtube

Start Date: 2/14/2011

Required Date: 2/28/2011

Start Qty: 1.00

Required Qty: 1.00

AN960C416 NAS1149C0463 Purchased No

270

Each

29.0000

1

1



washer



Location

Loc Qty

Loc Code

ST346

15358

29

100993

29

1 BL 11-5-11

D3672-1 Manufactured No

270

Each

1,149.000

2

2



Phenolic Washer



Location

Loc Qty

Loc Code

ST077

1149

42329

10

52505

139

64177

1000

2 BL 11-5-11

AN3C4A Purchased No

270

Each

1,420.000

80

80



BOLT



Location

Loc Qty

Loc Code

ST350

157813

1420

115300

25

116075

361

116590

34

116704

1000

80 BL 11-5-11

AN4C5A Purchased No

270

Each

439.0000

1

1



BOLT



Location

Loc Qty

Loc Code

ST346

439

110552

1

112243

438

1 BL 11-5-11

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

# Picklist Print

Page 8

Friday, February 11, 2011 1:12:31 PM

Work Order ID: 66357



Parent Item: D206-642-541



Parent Item Name: Replacement Skidtube

Start Date: 2/14/2011

Required Date: 2/28/2011

Start Qty: 1.00

Required Qty: 1.00

D2646

Manufactured No

270

Each

76.0000

1

1



Aft Cap



Location

Loc Qty

Loc Code

FP-4

6

57332

6

FP6

16

52663

3

62678 ✓

12

63633

1

Return 2010

54

62678

54

1 BL 11-5-11

D3413-1

Manufactured No

270

Each

25.0000

1

1



Ring



Location

Loc Qty

Loc Code

ST420

9

62961

9

ST473

16

51586

1

53446

5

65294 ✓

10

1 BL 11-5-11

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

**DART**

RELEASED

07.02.12

DEO ATTACHED

DESIGN CP	DRAWN BY PH	DART AEROSPACE USA, INC. PORT HADLOCK, WA	
CHECKED [Signature]	APPROVED [Signature]	DRAWING NO. D3274	REV. D SHEET 1 OF 4
DATE 06.12.19		TITLE SKIDTUBE ASSEMBLY SCALE NTS	
A	04.03.15	NEW ISSUE	
B	04.08.09	MOVE SADDLE HOLE: 42.14 WAS 42.76	
C	05.03.16	ADD -043; NEW INSERTS	
D	06.12.19	NEW INSERTS, SS WEARSHOE + GASKET	

Qty -041	Qty -043	Part Number	Description
X		D3274-041	SKIDTUBE ASSEMBLY
	X	D3274-043	SKIDTUBE ASSEMBLY
1	1	D2600-1-240	EXTRUSION
1	1	D2646	AFT CAP
12	12	D2649	CROSS BOLT SPACER
12	37	D3275-1	CROSS BOLT SPACER
1	1	D3282-041	FLOAT WEB
1	1	D3285-1	CAP
1	1	D3413-1	RING
1	1	D3415-041	NUT PLATE
1	1	D3535-15	WEARSHOE
1	1	D3535-23	WEARSHOE
1	1	D3535-35	WEARSHOE
1	1	D3535-39	WEARSHOE
1	1	D3536-15	GASKET
1	1	D3536-23	GASKET
1	1	D3536-35	GASKET
1	1	D3536-39	GASKET
9	9	D3537-1	WEARPAD
1	1	D3537-3	WEARPAD
78	78	ALS7-1032-130	INSERT (or AKS4-1032-130, ALS4-1032-130, AELS-1032-130)
80	80	AN3C4A	BOLT
1	1	AN4C5A	BOLT
1	1	AN960C416	WASHER
80	80	AN960C10L	WASHER
2	2	CCR264SS3-3	RIVET
2	2	CR3212-4-03	RIVET
2	2	NAS1515H3L	WASHER

**GENERAL NOTES:**

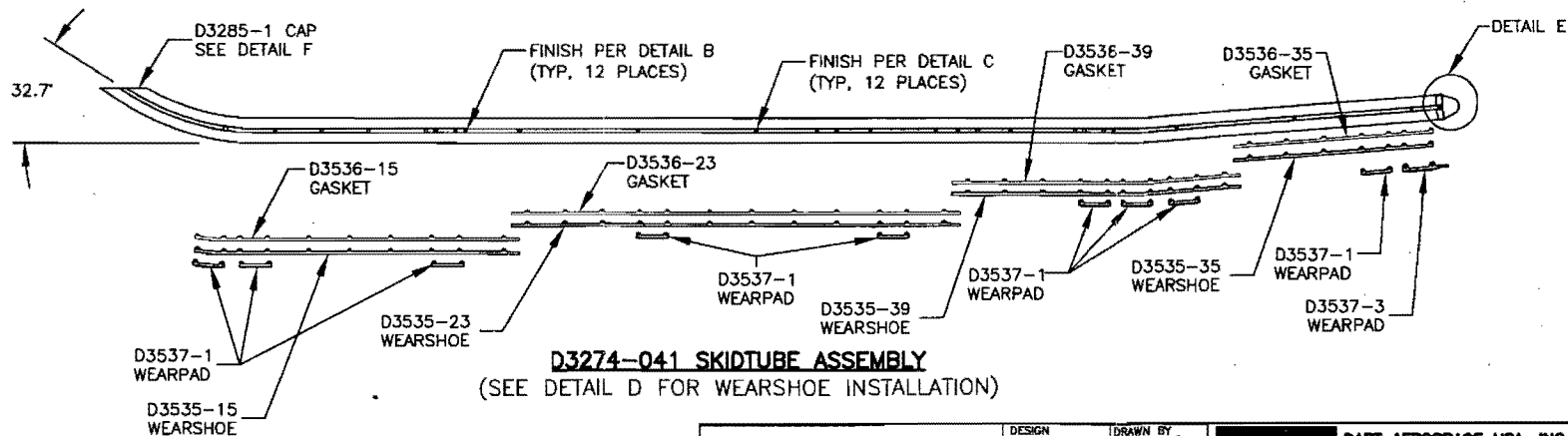
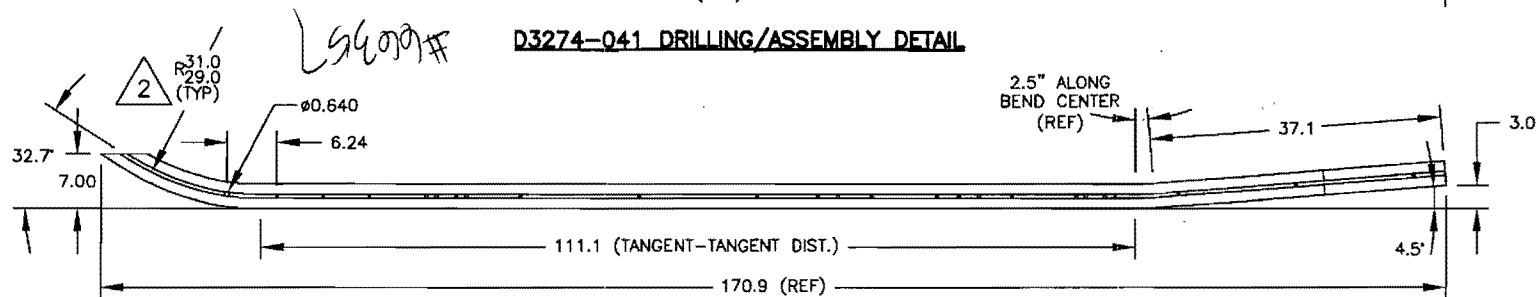
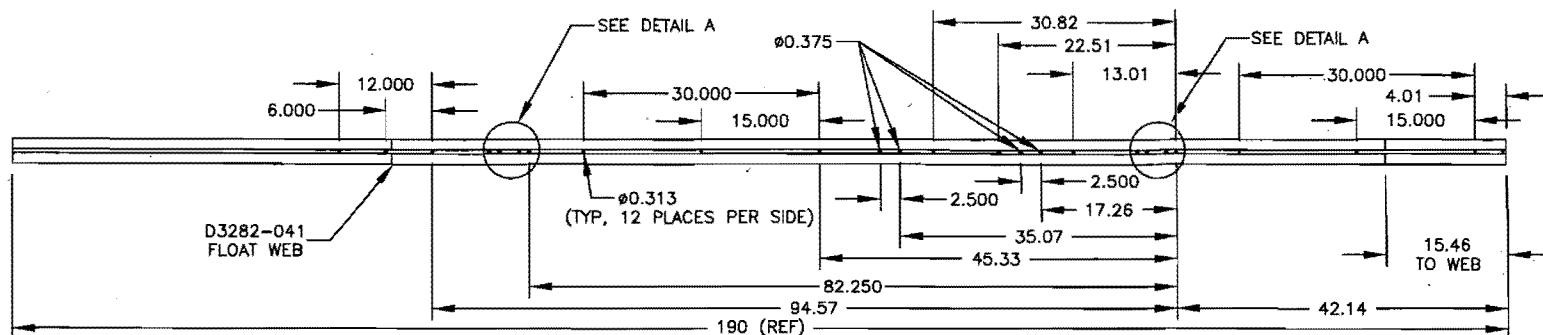
1. TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED.
2. DAMAGE TOLERANCE ON FWD BEND:  
THERE SHOULD BE NO VISIBLE WRINKLES IN THE BEND FROM THE GROUND TO A HEIGHT OF 7 INCHES ABOVE THE GROUND. IT IS ACCEPTABLE TO POLISH OUT GOUGES UP TO 0.020 DEEP IN THE BENT PORTION OF THE TUBE. A MAXIMUM REDUCTION IN DIAMETER OF 0.150" IS ACCEPTABLE IN THE BENT PORTION OF THE TUBE.
3. ALL HOLES DRILLED ON CENTERLINES.
4. BOND D3282-041 FLOAT WEB INTO D3274-1/-3 OUTER TUBE WITH NON-STRUCTURAL SIKAFLEX-241/291 ADHESIVE PER DART QSI 015. ENSURE HOLES LINE-UP.
5. WELDING TO BE DONE PER DART QSI 004.
6. FINISH: - ACID ETCH, ALODINE ASSEMBLY PER DART QSI 005 4.1  
- POWDER COAT WHITE (REF. 4.3.5.1) PER DART QSI 005 4.3
7. DRILL Ø0.297 HOLES FOR ALS7-1032-130 INSERTS USING DT3274-1T2 BEFORE FINISH. INSTALL ALS7-1032-130 INSERTS AFTER FINISH. SEAL WEARSHOE BOLTS WITH SIKAFLEX -241/-291.
8. SPRAY INSIDE OF TUBE WITH A COAT OF LPS LABORATORIES "LPS-3" AFTER FINISH AND INSTALLATION OF INSERTS. COAT ALL EXPOSED FASTENERS WITH LPS LABORATORIES "LPS PROCYON" AFTER FINAL ASSEMBLY, CLEAN EXCESS OFF POWDER COATING WITH MEK DEGREASER.

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DEO ATTACHED



RELEASED

07.02.12

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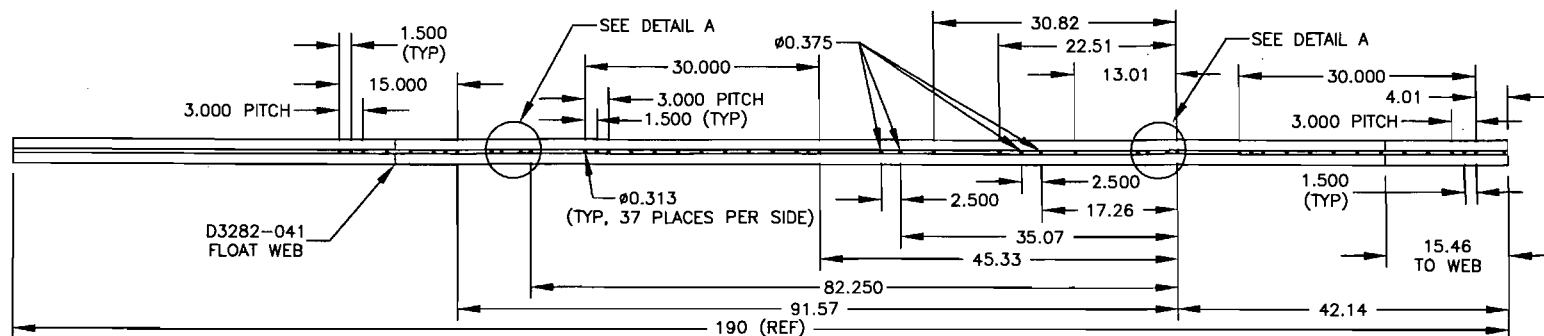
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DESIGN	CP	DRAWN BY	PH	<b>DART</b>	DART AEROSPACE USA, INC.
CHECKED	#	APPROVED	#	DRAWING NO.	D3274
DATE	06.12.19	TITLE	SKIDTUBE ASSEMBLY	REV. D	SHEET 2 OF 4
				SCALE	1:15

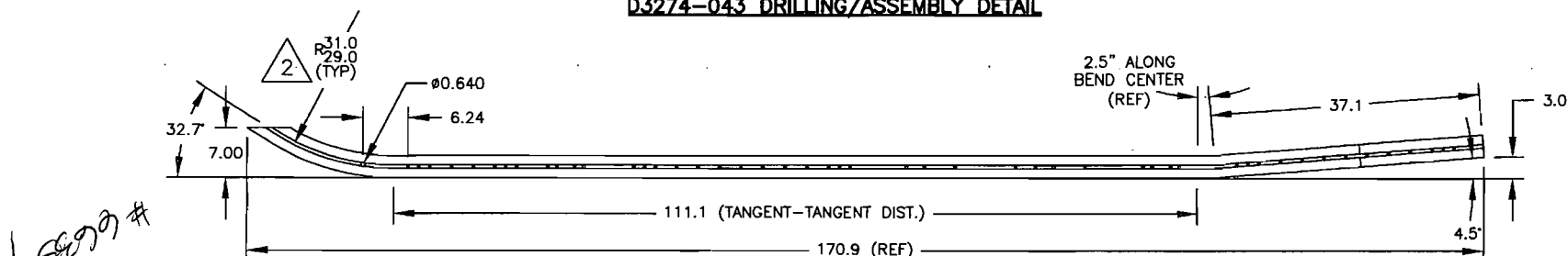




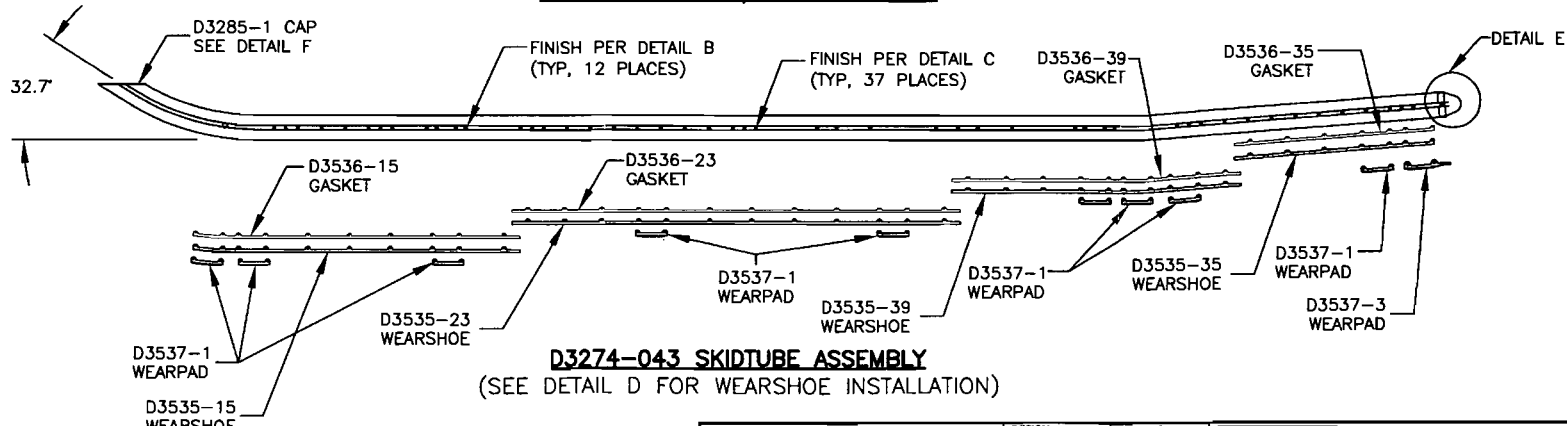
DEO ATTACHED



**D3274-043 DRILLING/ASSEMBLY DETAIL**



**D3274-043 BEND/DRILLING DETAIL**



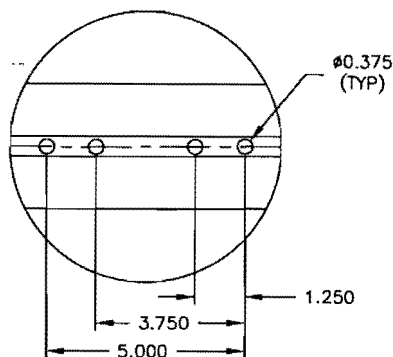
**D3274-043 SKIDTUBE ASSEMBLY**  
(SEE DETAIL D FOR WEARSHOE INSTALLATION)

RELEASED  
07.02.12

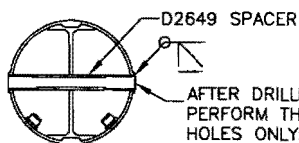
COPYRIGHT © 2004 BY DART AEROSPACE USA, INC.		DESIGN	DRAWN BY	<b>DART</b> DART AEROSPACE USA, INC. PORT HADLOCK, OH	
THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE USA, INC.		CP	PH	DRAWING NO. D3274	REV. D SHEET 3 OF 4
DATE		06.12.19	APPROVED	TITLE SKIDTUBE ASSEMBLY	SCALE 1:15



# **DETAIL A: DRILL DETAIL**

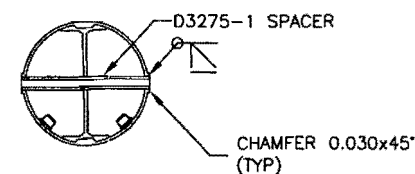


# **DETAIL B** FOR 0.375 HOLES ONLY

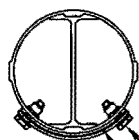


- AFTER DRILLING AND BENDING ASSEMBLY  
PERFORM THE FOLLOWING FOR 0.375  
HOLES ONLY:
1. CHAMFER HOLE 0.030x45°
  2. INSERT D2649 SPACER
  3. WELD INTO PLACE AND GRIND FLUSH
  4. C'BORE TO 0.313x0.75 DEEP

# **DETAIL C** FOR 0.313 HOLES ONLY

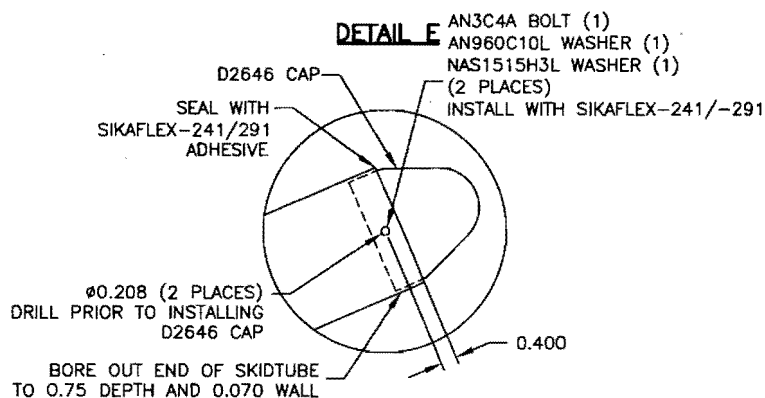


# **DETAIL D**

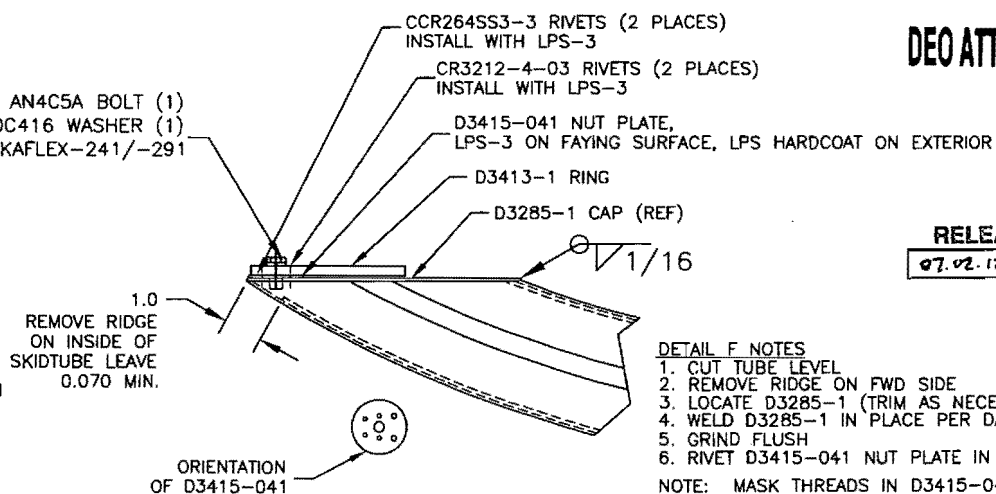


- ALS7-1032-130 INSERT (1)  
AN3C4A BOLT (1)  
AN960C10L WASHER (1)  
(78 PLACES)  
GASKET/WEARSHOE/WEARPAD (REF)

# **DETAIL E**



# **DETAIL F: END FINISHING DETAIL**



- DETAIL F NOTES**
1. CUT TUBE LEVEL
  2. REMOVE RIDGE ON FWD SIDE
  3. LOCATE D3285-1 (TRIM AS NECESSARY)
  4. WELD D3285-1 IN PLACE PER DART QSI 004
  5. GRIND FLUSH
  6. RIVET D3415-041 NUT PLATE IN PLACE
- NOTE: MASK THREADS IN D3415-041  
PRIOR TO FINISH

**DEO ATTACHED**

**RELEASED**

07.02.12

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	CHECKED	#	APPROVED	#		
	DATE	06.12.19		DRAWING NO.		D3274
			TITLE	SKIDTUBE ASSEMBLY		
				REV. D	SHEET 4 OF 4	
				SCALE	1:3	

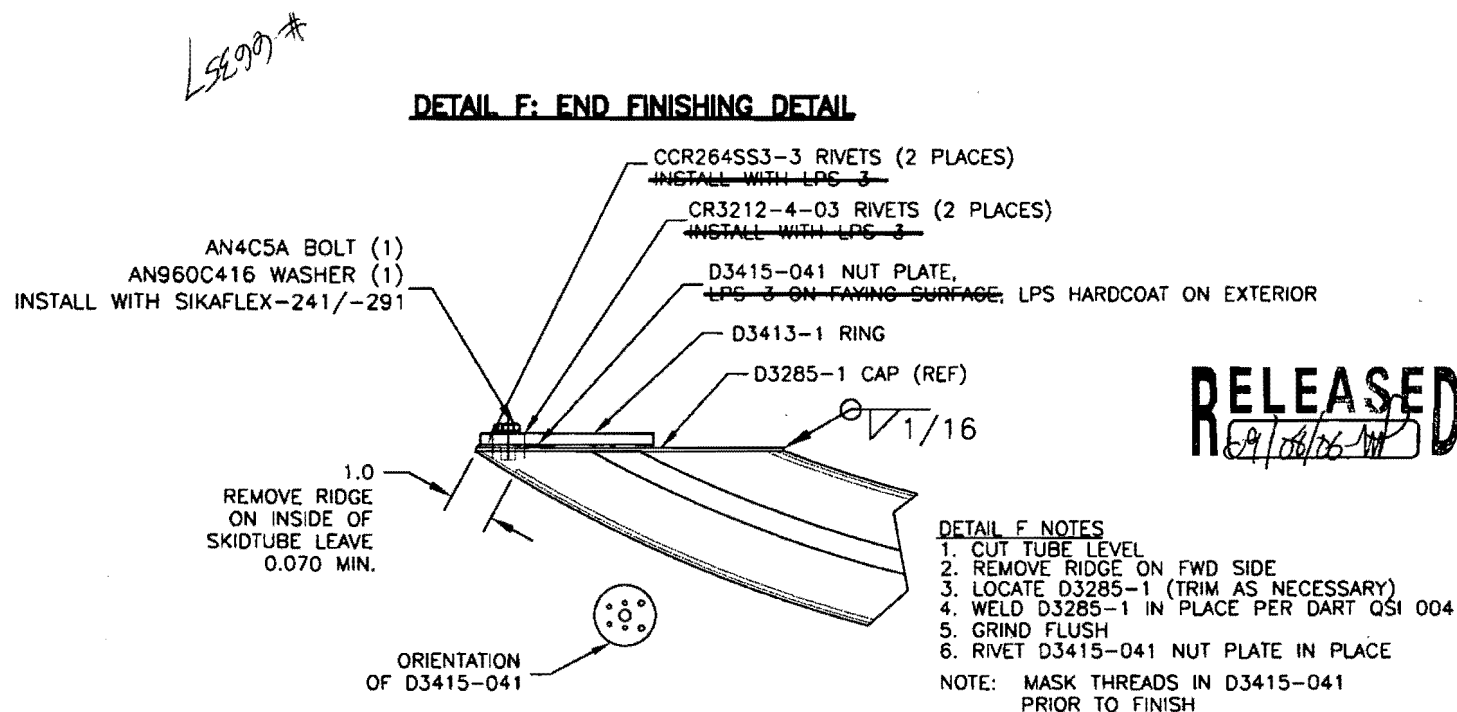


DRAWING NO. D3274	TITLE SKIDTUBE ASSEMBLY	REV. D	<b>DART AEROSPACE USA, INC</b> <b>ENGINEERING ORDER</b>	D.E.O. NO. D3274-D-1	SHEET NO. SHEET 1 OF 1	SCALE NTS
DRAWN <i>UP</i>	CHECKED <i>[Signature]</i>	MFG. APPR. <i>[Signature]</i>	APPROVED <i>[Signature]</i>	DE APPR. <i>[Signature]</i>		
DATE 09.06.17	DATE 09.06.23	DATE 09/06/23	DATE 09/06/23	DATE 09.06.23		

LPS-3 IS NO LONGER USED DURING ASSEMBLY OF SKIDTUBE.

AMEND NOTE 8: "~~SPRAY INSIDE OF TUBE WITH A COAT OF LPS LABORATORIES 'LPS 3' AFTER FINISH AND INSTALLATION OF INSERTS.~~  
COAT ALL EXPOSED FASTENERS WITH LPS LABORATORIES 'LPS PROCYON' AFTER FINAL ASSEMBLY, CLEAN EXCESS OFF  
POWDER COATING WITH MEK DEGREASER."

AMEND DETAIL F AS SHOWN:





NO. 252

AWS D17.1.2001  
QUALIFICATION TEST RECORD

Name: Barclay Elliott  
Job number: 66358  
Part number: D206 642 541  
Description: D06  
Welding Process: Tig[☒] Mig[ ]  
Base material: Aluminum  
Current: AC[☒] DC[ ]

TEST REQUIREMENTS AND RESULTS

Visual: pass[☒] fail[ ]  
Penetration: pass[☒] fail[ ]

UNACCEPTABLE

Cracks: pass[☒] fail[ ]  
Undercut: pass[☒] fail[ ]  
Pin holes: pass[☒] fail[ ]  
Overlap (cold lap): pass[☒] fail[ ]  
Porosity (surface): pass[☒] fail[ ]  
Coloration: pass[☒] fail[ ]

Qualifier Pat Burns Date of Test Coupon 11-05-09

Welder Barclay Elliott Date of Test Coupon 11-05-09

The above named individual is qualified in accordance with AWS D17.1.2001 to weld

